Refine Search

Search Results -

Terms	Documents
L13 and (calculat$5 or determin$4)	14

Database:
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L14

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Friday, October 12, 2007 Purge Queries | Printable Copy | Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=PGPB,USPT; PLUR=YES; OP=ADJ		
L14	L13 and (calculat$5 or determin$4)	14	L14
L13	L12 and (705/2).ccls.	14	L13
L12	L11 and (reduc$4 or diminish$4 or decreas$4 or minimiz$4)	45	L12
L11	(compar$4 or chang$5) same (medical$3 or healthcare) same (provid$3 or ppo or hmo or mco) same (predict$5 or project$5) same cost$3	52	L11
L10	(compar$4 or chang$5) same (medical$3 or heathcare) same (provid$3 or ppo or hmo or mco) same (predict$5 or project$5) same cost$3	39	L10
L9	l5 and (705/2).ccls.	13	L9
L8	L6 and (select$4 or choos$4)	16	L8
L7	L6 and (705/3).ccls.	1	L7
L6	L5 and (benefit$5 or sav$3) same cost$3	17	L6
L5	L4 and (compar$4 or chang$5)	45	L5
	(healthcare or hospital$6 or medical$3) same network$5 same (reduc$4 or		

L4	diminish$4 or decreas$4 or minimiz$4) same (compar$4 or chang$5) same (provid$3 or ppo or hmo or mco)	45	L4
L3	(healthcare or hospital$6 or medical$3) near20 network$5 near20 (reduc$4 or diminish$4 or decreas$4 or minimiz$4) near20 (compar$4 or chang$5) near20 provid$3	0	L3
L2	(virtual$3 healthcare or hospital$6 or medical$3) near20 network$5 near20 (reduc$4 or diminish$4 or decreas$4 or minimiz$4) near20 (compar$4 or chang$5) near20 provid$3	0	L2
L1	(virtual$3 healthcare or hospital$6) near20 network$5 near20 (reduc$4 or diminish$4 or decreas$4 or minimiz$4) near20 (compar$4 or chang$5) near20 provid$3	0	L1

END OF SEARCH HISTORY

Hit List

First Hit | Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 14 of 14 returned.

☐ 1. Document ID: US 20070214013 A1

L14: Entry 1 of 14 File: PGPB Sep 13, 2007

PGPUB-DOCUMENT-NUMBER: 20070214013
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20070214013 A1

TITLE: Method and system for assessing, quantifying, coding & communicating a patient's health and perioperative risk

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 2. Document ID: US 20070129967 A1

L14: Entry 2 of 14 File: PGPB Jun 7, 2007

PGPUB-DOCUMENT-NUMBER: 20070129967
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20070129967 A1

TITLE: Automated method for medical care management

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 3. Document ID: US 20060281977 A1

L14: Entry 3 of 14 File: PGPB Dec 14, 2006

PGPUB-DOCUMENT-NUMBER: 20060281977
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060281977 A1

TITLE: Diagnostic and treatment planning calculator

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 4. Document ID: US 20060100906 A1

L14: Entry 4 of 14 File: PGPB May 11, 2006

PGPUB-DOCUMENT-NUMBER: 20060100906
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060100906 A1

TITLE: Client driven healthcare system and process

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 5. Document ID: US 20060085230 A1

L14: Entry 5 of 14 File: PGPB Apr 20, 2006

PGPUB-DOCUMENT-NUMBER: 20060085230
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060085230 A1

TITLE: Methods and systems for healthcare assessment

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 6. Document ID: US 20060064332 A1

L14: Entry 6 of 14 File: PGPB Mar 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060064332
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060064332 A1

TITLE: Health cost calculator/flexible spending account calculator

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 7. Document ID: US 20050033609 A1

L14: Entry 7 of 14 File: PGPB Feb 10, 2005

PGPUB-DOCUMENT-NUMBER: 20050033609
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050033609 A1

TITLE: Healthcare system integrated with a healthcare transaction processor, and method for providing healthcare transaction processing services

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 8. Document ID: US 20040267570 A1

L14: Entry 8 of 14 File: PGPB Dec 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040267570
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040267570 A1

TITLE: Method for information and management system for health care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 9. Document ID: US 20030144879 A1

L14: Entry 9 of 14 File: PGPB Jul 31, 2003

PGPUB-DOCUMENT-NUMBER: 20030144879
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030144879 A1

TITLE: System for providing medical service

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 10. Document ID: US 20030055680 A1

L14: Entry 10 of 14 File: PGPB Mar 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030055680
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030055680 A1

TITLE: Financial analysis of healthcare service agreements

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 11. Document ID: US 20020147617 A1

L14: Entry 11 of 14 File: PGPB Oct 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020147617
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020147617 A1

TITLE: Health cost calculator/flexible spending account calculator

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 12. Document ID: US 6108635 A

L14: Entry 12 of 14 File: USPT Aug 22, 2000

US-PAT-NO: 6108635
DOCUMENT-IDENTIFIER: US 6108635 A

TITLE: Integrated disease information system

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 13. Document ID: US 6061657 A

L14: Entry 13 of 14 File: USPT May 9, 2000

US-PAT-NO: 6061657
DOCUMENT-IDENTIFIER: US 6061657 A

TITLE: Techniques for estimating charges of delivering healthcare services that take complicating factors into account

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 14. Document ID: US 5845254 A

L14: Entry 14 of 14 File: USPT Dec 1, 1998

US-PAT-NO: 5845254
DOCUMENT-IDENTIFIER: US 5845254 A

TITLE: Method and apparatus for objectively monitoring and assessing the performance of health-care providers based on the severity of sickness episodes treated by the providers

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
L13 and (calculat$5 or determin$4)	14

Display Format: - Change Format

Previous Page Next Page Go to Doc#

First Hit Fwd Refs Previous Doc Next Doc Go to Doc#
End of Result Set

Generate Collection Print

L9: Entry 13 of 13 File: USPT Oct 10, 2000

DOCUMENT-IDENTIFIER: US 6131090 A
TITLE: Method and system for providing controlled access to information stored on a portable recording medium

Brief Summary Text (4):
Social, economic, and technical changes have combined to substantially reduce the role played by the family doctor; the general practitioner who provided most of a patient's care over a substantial period of time, and who was an effective custodian of the patient's medical records. As medical practice shifts from the traditional fee-for-service basis to HMO's and "networks" of physicians and competition between these organizations grows ever more intense, employee/patients change or lose their jobs and thus change or loose their access to particular health care organizations, and both business and recreational travel continue to increase, it becomes increasingly less effective to rely upon a family doctor as the custodian of a patient's medical records. For these and other reasons there has been a long felt need for a mechanism whereby appropriate medical personal can quickly access a patient's medical records.

Current US Cross Reference Classification (6):
705/2

Previous Doc Next Doc Go to Doc#

L14: Entry 11 of 14 File: PGPB Oct 10, 2002

DOCUMENT-IDENTIFIER: US 20020147617 A1
TITLE: Health cost calculator/flexible spending account calculator

Current US Classification, US Secondary Class/Subclass:
705/2

Summary of Invention Paragraph:
[0002] This invention relates to estimating and calculating health care costs for individuals and to optimal estimation for flexible spending account amounts to set aside for pre-tax savings.

Summary of Invention Paragraph:
[0006] Today there are many different types of health insurance plans, including HMOs (Health Maintenance Organizations), PPOs (Preferred Provider Organizations), POSs (Point of Service) and FFSs (Fee For Service). Within these categories, there are many different specific plans, each with different benefit designs, costs, and other characteristics. Consumers who can choose between two or more insurance plans thus face a complex choice. Such an individual would do well to have some guidance as to what or how that individual may optimally provide coverage for him- or herself. In the event there is a household, further guidance would be useful for deciding on the household coverage, since most people cover their dependents and themselves in the same insurance plan. Ideally, the user of a medical care guidance system would be provided with comparisons and contrasts of different health plans as to the likely distribution of out-of-pocket costs that an individual or household would incur in each plan in the coming year, and with respect to other plan characteristics. In particular, people choose health insurance for future periods, such as the coming year, yet they do not know how much health care they will use in this future period. For example, a person might be a high user or low user of medical services. There can also be cases where episodes of illness occur. It would be desirable to know what is the likelihood of the illness episodes continuing to happen and what would be the effect on the health costs according to the coverage chosen by the individual. It is highly desirable to have a health cost calculator, which can calculate, over a variety of health or medical situations, what the likely distribution of future medical costs to an individual or to a family household. An additional desirable feature would be to include historical patient information. This would allow prediction, by a statistical comparison of similar individuals and households, of an individual's or household's statistically predicted cost results, from their choice of medical insurance plan, and to provide probabilities of certain types of illnesses and the resulting costs of such, including out of pocket costs.

Summary of Invention Paragraph:
[0007] Moreover, if a consumer of medical services had a good cost calculation of that consumer's likely distribution of future medical costs, that consumer would be in a position to estimate how much money he or she might want to allocate to a flexible spending account (FSA). A consumer might want to have "enough" set aside in the FSA, since that amount would not be taxed. The best "enough" would exactly match the "out-of-pocket" amount spent on medical costs. That way, maximum tax benefit would be obtained and no money would be left "unused" at the end of the year, since that money is not carried over to next year's FSA, but is lost if not

spent. The FSA amount decision is made up-front, at the beginning of the year. Consequently, some guidance from a computer-based analysis and prediction program would be useful. The consumer is likely to find such a method for producing optimal estimates of the amount to be aside for the FSA, for the year, to be most desirable.

Summary of Invention Paragraph:
[0009] This invention also comprises a method for calculating optimal flexible savings account contributions. The method and system includes using parameters of (including themselves, including information on their degree of risk aversion. It also includes assembling recent data (preferably no more than three years old) on health care use and costs for a large population, to be used as a basis for actuarial analyses. It also involves formulating a dynamic numerical model based on a user's objective function; formulating a user's utility function and a health transition equation; calibrating the health transition equation with historical claims data linked to the user's health status; solving the numerical model by numerical calculation methods with assigned exogenous parameters and with test values for the preference parameters; estimating preference parameters using parameter values which correspond to solutions of the dynamic program which are close to observed historical expenditures of like-situated members of a given health plan, to input regarding the user's risk aversion, and to the user's income. Then the dynamic programming model is solved by numerical calculation methods for optimal flexible spending account contribution for a particular user in one or more particular health plans (or no health insurance), with assigned exogenous parameters and with estimated values for the preference parameters. The system and method then outputs the calculated optimal contributions to the user.

Brief Description of Drawings Paragraph:
[0012] FIG. 2 shows a screen which presents a of what the Health Cost Calculator (HCC) does;

Detail Description Paragraph:
[0035] The following description is of the best mode presently contemplated for carrying out the invention. This description is not to be taken in a limiting sense, but is merely made for the purpose of describing the general principles of the invention. The scope of the invention should be determined with reference to the claims.

Detail Description Paragraph:
[0037] HCC--Health Cost Calculator

Detail Description Paragraph:
[0038] A first embodiment of the invention is an embodiment of the health cost calculator (HCC), which comprises a computer based tool that is designed to help consumers compare alternative health insurance choices available to them, by illustrating and comparing how much they would spend out-of-pocket for health insurance and medical care in the coming year in various plans. The methods used in the health cost calculator can be used to show the out-of-pocket costs of any of number and type of health insurance plans, including, for example, fee for service (FFS), PPO, HMO, POS, and so on. The health cost calculator can be implemented to run on a single computer or through a computer network including Internet, Intranet, or Extranet. Users must be able to enter data into the tool using an input device such as a keyboard, mouse trackball or a touch-screen and must be able to view the output on a monitor. The HCC is browser independent and operating system independent and platform independent.

Detail Description Paragraph:
[0041] Another embodiment of the invention also comprises a computer-based method for calculating optimal flexible savings account (FSA) contributions comprising the steps of processing data and performing numerical calculations with a central

processing unit; storing data and computer programs on a mass storage device; storing data and commands in volatile memory; formulating a dynamic numerical model based on a user's objective function; formulating a user's utility function and a health transition equation; calibrating the health transition equation with historical claims data linked to the user's health status; solving the numerical model by numerical calculation methods with assigned exogenous parameters and with test values for the preference parameters; estimating preference parameters using parameter values which correspond to solutions of the dynamic program which are close to observed historical expenditures of like-situated members of a given health plan, to input regarding the user's risk aversion, and to the user's income; solving the dynamic programming model by numerical calculation methods for optimal flexible spending account contributions for a particular user in one or more particular health plans (or no health insurance), with assigned exogenous parameters and with estimated values for the preference parameters; and outputting the calculated optimal contributions to the user.

Detail Description Paragraph:
[0042] A third embodiment comprises the Health Cost Calculator feeding its data into the required data fields of the Flexible Spending Account Calculator, in a seamless manner.

Detail Description Paragraph:
[0043] HCC--Health Cost Calculator:

Detail Description Paragraph:
[0044] Returning to the detailed description of the first embodiment, the Health Cost Calculator (HCC) is a computer-based tool that is designed to help consumers compare alternative health insurance choices available to them, by illustrating and comparing how much they would spend out-of-pocket for health insurance and medical care in the coming year in various plans.

Detail Description Paragraph:
[0051] Examples follow the description of the Flexible Spending Plan Calculator and illustrate both the Health Cost Calculator and the Flexible Spending Plan Calculator.

Detail Description Paragraph:
[0052] FSAC--Flexible Spending Account Calculator:

Detail Description Paragraph:
[0053] The Flexible Spending Account Calculator (FSAC) is a computer-based tool that is designed to help consumers decide how much money to contribute to their flexible spending account for health care. Flexible spending accounts permit consumers to pay for health care using pre-tax dollars; however, in general consumers must decide how much money to contribute to their account at the beginning of a calendar year, and they lose any money that they do not spend by the end of that year. Consumers' decisions about the optimal amount to contribute are considerably complicated by two factors: uncertainty regarding the incidence of medical expenditures over the course of the coming benefit year and the loss of any unspent money in the FSA at the end of the year.

Detail Description Paragraph:
[0054] The methodology underlying the second embodiment as the FSAC represents an addition to the first embodiment, the Health Cost Calculator methodology (HCC).

Detail Description Paragraph:
[0068] Calculating Optimal FSA Contributions: A Model of Optimal Contributions to a Flexible Savings Account:

Detail Description Paragraph:

[0069] The main incentive that employees have for contributing to a flexible savings account (FSA) is the ability to spend pre-tax dollars on medical care. However, the optimal amount to contribute is considerably complicated by two factors: (1) uncertainty regarding the incidence of medical expenditures over the course of the coming benefit year and (2) loss of any unspent money in the FSA at the end of the year. The purpose of this section is to describe the model that the FSA Calculator will use to derive its suggestions.

Detail Description Paragraph:
[0070] This FSAC includes a novel method for calculating optimal FSA contributions. Previous authors have developed methods (i.e., Nunnikhoven 1992; Auster and Sennetti, 1994; Cuddington 1999). However, each of these methods suffers from a number of limitations that are addressed here. Most notably, each of these methods neglects the fact that consumers who have not spent down their FSA can increase medical expenditures toward the end of a benefit year, considerably mitigating the risk of losing left-over funds at the end of the year. In other words these models assume that consumers spend on medical care only if they suffer a health shock. In the model used here, consumers can improve health status by spending more on medical care even if they do not receive health shocks. This assumption is more realistic given that healthy individuals regularly consume medical care services in the form of medical exams or other preventive care services. In addition, the other methods assume a one-to-one correspondence between the health shocks and medical care expenditures. This restriction on consumer behavior implicitly assumes a completely inelastic demand for health care. In the model used here, consumers are responsive to the marginal price of medical care expenditures and are allowed to reduce demand for medical care in the face of higher marginal prices. Finally, other methods assume a very simplistic form of utility function. In particular, they assume that individuals are risk neutral and maximize the expected value of resources available for consumption. The utility function used here is more realistic.

Detail Description Paragraph:
[0072] This method uses a general framework in which consumers derive utility from health status and consumption of goods and services. In this framework, one can calculate optimal FSA contributions for consumers that depend upon their degree of risk-aversion. Combining this method with real data on expenditure patterns over the course of the year, one can construct more realistic estimates of optimal FSA contributions. The model starts with consumers choose FSA contribution, G, at the beginning of the benefit year and at the same time plan consumption of medical care and other goods and services for the year. The consumption plan for medical care specifies medical care use for every possible contingency the consumer might face. The only source of uncertainty in the model is the incidence of health shock over the course of the year. Therefore the consumers' consumption plan specifies use of medical care and other goods for every possible health shock a consumer might face. In the general framework for this model, consumers choose consumption and FSA contributions to maximize their expected utility: 1 G , { m , c } max = - .infin. .infin. EU = - .infin. .infin. U (h , c) f (,) (1)

Detail Description Paragraph:
[0082] The purpose of expenditures on medical care is to improve health, and indeed, in order to calculate a solution to this problem a health transition equation must be estimated:

Detail Description Paragraph:
[0083] where .epsilon..sub.t represents shocks to health in period t. A new health shocks arrives each period, and it may either improve or diminish the health status of the consumer. While consumers do not know in advance the exact health shocks that they will receive over the course of the benefit year, they presumably have some information regarding the probability distribution from which the health shocks are drawn:

Detail Description Paragraph:
[0084] where F(.) is the cumulative density function of the distribution of shocks, and .theta. parameterizes that distribution. One of the objects needed by the optimal FSA calculator is .theta., the method for obtaining this object is described below. In the calculation of the optimal FSA, the model assumes that .epsilon. is normally distributed, which seems reasonable since a negative health shock is being modeled. This functional form assumption for F is flexible enough to reflect some well-known facts about health shocks (for example, shocks are more likely and more severe for older people).

Detail Description Paragraph:
[0091] Integrating the FSAC--(Flexible Spending Account Calculator) with the HCC--Health Cost Calculator:

Detail Description Paragraph:
[0092] In performing its calculations, the FSAC and HCC both use information that the user provides to classify the user into household types that are based upon the size, demographic characteristics, and health characteristics of the user and his/her households; this information is described in greater detail in the description of the HCC. Then, the calculator estimates the distribution of medical expenditures in the following year conditional on the user's household type. For the FSAC, we will use the same assignment of users into household types, described above and in the HCC description, and the dynamic program described in Table 1 is solved conditional on the information pertinent to each user's household type. In some applications of the FSAC, household types may be subdivided into categories of health care use, as described in the description of the HCC, and optimal FSA contributions are calculated for these smaller groups.

Detail Description Paragraph:
[0096] The main idea underlying the estimated parameters of the health transition equation with these data is that medical expenditures can serve as a proxy for the health status of people in the user's household type. Those household types with high medical expenditures in a given year presumably have users who are on average less healthy than household types with low medical expenditures. Thus, medical expenditures will serve two different roles in the calculations: (1) an input into the health transition equation, where increased medical expenditures should improve health (or else there would be no reason to spend money on health care in this model), and (2) as a proxy for health status, where high medical expenditures signifies poor health.

Detail Description Paragraph:
[0104] On-line users are asked to enter their yearly pre-tax family income levels. Based on this information, an estimate the marginal tax rate of the user is made, assuming standard deductions to calculate state and federal income taxes. In addition, the calculation of the marginal tax rate will take into account the contribution to the marginal tax rate of FICA and Medicare taxes.

Detail Description Paragraph:
[0106] The objective of the FSAC is to obtain the optimal FSA contribution based on the parameters of the utility function, budget constraint and the health shock distribution, and to show changes in the optimal FSA contribution in response to changes in the these parameters. Since there is no analytical solution for the consumers' utility maximization problem, the optimal FSA contribution will be estimated using a multi-step numerical approach. In the first step the optimal consumption of medical care and other consumption goods for each possible health shock are calculated, taking the amount of the FSA contribution as given. Inputting the optimal consumption plan for each possible health shock into the utility function gives the maximum utility attainable in each state of the world. In the second step the expected maximum utility is calculated by multiplying the maximum

utility under each health shock by its probability of occurrence and adding over all health shocks. These two steps are repeated for each possible FSA contribution to calculate the maximum expected utility for each FSA contribution. Finally the FSA contribution with the highest expected maximum utility is chosen as the optimal FSA contribution. Table 2 gives a schematic view of the above solution methodology. Programming is carried out in C++ or Fortran, or another readily available computer language.

Detail Description Paragraph:
[0108] The methods discussed in the previous section give a quick method to solve the program for each consumer if one knows the parameters of the objects in the model. However, up to now, only the calibration of the exogenous parameters in the model has been described, not the preference parameters. The main object of the next step in the estimation is to obtain consistent estimates of these parameters (which are collected into a vector called .mu. for convenience). The preference parameters are estimated using an iterative strategy. For a given value of .mu., the optimal medical care expenditure paths for each consumer. In this model, .mu..sup.(j) represents the value of .mu. in the j.sup.th iteration, X.sub.i*.left brkt-bot.(.mu..sup.(j)).right brkt-bot. is the optimal values obtained from solving the dynamic program, and let X.sub.i is the actual values of these outcomes for consumer i. In particular, the FSAC uses data on actual medical expenditures from the health insurance claims data on the reference population. The basis for estimating the preference parameters is to pick them such that the difference between the observed medical expenditures and the predicted medical expenditures (from the model) are as close as possible. The value of .mu. in the next iteration--.mu..sup.(j+1)--are calculated using a least squares distance function: 7 S [ ] = i = 1 N (X i - X i * [ ]) W ' W (X i - X i * [ ]) (18)

Detail Description Paragraph:
[0109] Where, W is a weighting matrix. The ultimate goal of the analysis is to minimize the distance function with respect to .mu.. Using standard hill climbing methods, .mu..sup.(j+1) can be calculated based on the derivatives of S[.mu..sup.(j)]. The model will have converged to the estimate of .mu. when the norm of the first derivative of S is sufficiently close to zero.

Detail Description Paragraph:
[0110] Calculating Optimal FSA contributions:

Detail Description Paragraph:
[0113] Generate optimal FSA contributions in each health insurance plan, based on households similar to the user's. To generate optimal FSA contributions for a particular user of the FSAC, one utilizes the user 's household profile and the additional information collected. Specifically, one extracts from the household-level data file on the reference population all the households with the same household profile as the user. In general, one then calculates the mean optimal FSA contribution among the households of this type, in each health plan about which the FSAC is providing information and that is available to the user, and for each of the three values of .eta..sub.2. In some applications of the FSAC one also calculates the mean optimal FSA contribution among the households. This is done within the respective categories of health care use, as already described, in each health plan about which the FSAC is providing information and that is available to the user, and for each of the three values of .eta..sub.2.

Detail Description Paragraph:
[0115] The plan designs of many insurance plans make different provisions for services provided "in network" vs. "out of network." In general, therefore, one calculates the optimal FSA contribution in the respective categories of health care use and for the various values of .eta..sub.2 under two scenarios: (1) all health care is received in-network, and (2) all health care is received out-of-network; or other scenarios as appropriate. If a particular plan has more tiers (e.g. a POS

plan), more corresponding scenarios are calculated.

Detail Description Paragraph:
[0120] The header 38 is comprised of an image file that displays the title 46 of the tool and a photo montage design 48. The photos contain images related to health care (such as doctors, patients, prescription bottles, etc.) 48 and an image of a calculator 50.

Detail Description Paragraph:
[0123] This page, FIG. 2, presents a more thorough description 58 of what the HCC does and how it can benefit the user in choosing a health plan. It also explains the goals 60 that are served by the HCC in that it calculates an estimated yearly out-of-pocket health care cost and defines which plan would best suit the user and his or her family based on this information 62.

Detail Description Paragraph:
[0177] Using the plan design of each health insurance plan for which the HCC will provide information, and the claims-level data for the reference population, a calculation is made to determine what the annual out-of-pocket costs for households in the reference population would have been had they paid for services according to the plan design of the respective health insurance plans.

Detail Description Paragraph:
[0178] Specifically, for each household in the claims data, the claims are sorted for individual services by household member and by the date it was provided. Using the plan design, and the price data already acquired, the health care claims are then processed chronologically, assigning out-of pocket costs according to the plan design of the particular health insurance plan being modeled. One repeats this for each plan for which the HCC will provide information. This processing takes into account all cost components of the respective plans, including individual and household deductibles; coinsurance and co-payments; individual and household stop-loss provisions; and what services are covered and not covered. For covered services provided in-network, deductibles and coinsurance rates are calculated based on the "cost" of the service; for services that are not covered by a particular plan, and covered services that are provided out-of-network, deductibles and coinsurance rates are calculated based on the "billed charge" for the service.

Detail Description Paragraph:
[0189] Using the hypothetical household profile, as entered for FIG. 3 through FIG. 5, and using hypothetical data on health service use and prices, Table 1a illustrates the process of calculating out-of-pocket costs for this household in Plans A and B. All services are assumed to be provided in-network in Table 3a, while Table 3b illustrates the process of calculating out-of-pocket costs assuming all services are provided out-of-network.

Detail Description Paragraph:
[0197] For each household in the reference population, one calculates the total of health care used during the year covered by the claims data. Specifically, one prices each health care service using its cost. One then adds up the cost of all services for each member of a household to obtain the household total. For instance, the total health care use of the hypothetical household illustrated in Table 3 over that year is $10,865 (the sum of the "cost" column). One then sorts all households in the reference population by the total value of health services used during the year.

Detail Description Paragraph:
[0206] Calculate the Use of Specific Types of Health Care for Each Household in the Reference Population.

Detail Description Paragraph:

[0207] For each household in the reference population, one calculates the number of units of specific types of health care used by the household in the year covered by the claims data. The specific types of health care will vary depending on population for which the particular application of the HCC is being developed.

Detail Description Paragraph:
[0208] As an example, one calculates the number of total outpatient visits, including visits to physicians, physician's assistants, nurses, psychologists, mental health social workers, and other providers of ambulatory care. One calculates the number of emergency room visits and inpatient admissions, including any overnight stay in a hospital, nursing home, or other inpatient medical facility; and prescriptions used by the members of the household during the year. In other applications, one might use more or fewer types of health care, and/or different types.

Detail Description Paragraph:
[0211] Calculate Mean Cost of Specific Categories of Health Care Use.

Detail Description Paragraph:
[0212] Using the claims-level data file, the mean unit cost of specific types of health care, corresponding to the categories discussed, ("no use", "low", "moderate", "high" and "very high") is calculated. As an example, one may work with four categories of health care: outpatient visits and associated services; emergency room visits and associated services; inpatient admissions and associated services; and prescriptions. These categories of use are defined as follows: (1) outpatient visit and associated services: one counts each outpatient visit, and ancillary services provided on the same day as the visit, as one unit of outpatient care; (2) one prices these using the corresponding cost. If there is more than one visit and ancillary services on a given day, so that it is unclear with which visit the ancillary services were associated, one assigns them all to the first visit listed in the data on that date.

Detail Description Paragraph:
[0219] For each type of health care used in the particular application of the HCC, one then calculate the mean cost per unit of care. Depending on the particular application of the HCC, one calculates the mean cost per unit across the whole reference population, or for households with the same household profile as the user's.

Detail Description Paragraph:
[0230] Once this information has been entered by the user, it gets sent to the CGI program and then to the data processing program. One then calculates the total cost of this pattern of health care. Specifically, one prices the units in the respective categories of use by the corresponding average cost already calculated. In this example, the anticipated health care use described in Table 3 would cost $11,556. This result is sent back to the CGI program and then presented to the user.

Detail Description Paragraph:
[0231] Calculation of Mean Household Use of Particular Types of Health Care, within Category of Health Care Use.

Detail Description Paragraph:
[0232] To illustrate patterns of use of different health care for a particular user of the HCC, one designates the user's household profile. Specifically, using the data processing program, one extracts from the household-level data file on the reference population all the households with the same household profile as the user. Within each category of health care use, one then calculates the mean number of units of specific types of health care. For example, included are outpatient visits, emergency room visits, inpatient admissions, and prescriptions,

respectively, used during the year covered by the claims data, among the households in the respective category of health care use. Of these households with the same household profile as the user, one also calculates the fraction within each category of health care use.

Detail Description Paragraph:
[0233] To illustrate, one can imagine the hypothetical user, and the categories of use described (i.e., "no," "low," "moderate," "high," and "very high" use). One extracts from the claims data on the reference population all the households with the same household profile as the hypothetical user. Using these households and the types of health care illustrated, one calculates the following numbers:

Detail Description Paragraph:
[0244] To generate out-of-pocket cost estimates for a particular user of the HCC, one designates the user's household profile. Specifically, one extracts from the household-level data file on the reference population all the households with the same household profile as the user. Within each category of health care use, one then calculates the mean out of pocket cost among the households in the respective category of health care use, in each health plan about which the HCC is providing information and that is available to the user.

Detail Description Paragraph:
[0245] The plan designs of many insurance plans make different provisions for services provided "in network" vs. "out of network." In general, therefore, one calculates the mean out-of pocket cost in the respective categories of health care use under two scenarios: all health care is received in-network, and all health care is received out-of-network. (For some implementations, one might want to calculate costs under other scenarios of the mix between in-network and out-of-network care, in addition to or instead of these two.) To illustrate, one can imagine the hypothetical user and the categories of use. One extracts from the claims data on the reference population all the households with the same household profile. Using these households, one calculates the following numbers:

Detail Description Paragraph:
[0251] One calculates these values for each health plan about which the particular application of the HCC is providing information. For each of these plans, one calculates these values once for the "in-network" scenario and then again for the "out-of-network" scenario (and/or for whatever alternative scenarios of the mix of in-network and out-of-network care one presents in the particular implementation of the tool). For POS plans, one also calculates these values for a third scenario, representing the case in which all care is provided in network but patients self-refer to medical specialists. Finally, one calculates the mean of total out-of-pocket spending for health services used during the year, at each level of use, under the scenario of no health insurance coverage, so that households were required to pay billed charges for all health care.

Detail Description Paragraph:
[0267] The final screen reminds the user of open enrollment dates 154 and provides a link 156 to the company's Human Resources website to access health plan information. This final screen also contains a button 158 that enables the user to erase all information entered into the calculator to secure the user's privacy after using the tool.

Detail Description Paragraph:
[0282] Calculate Condition-specific Out-of-pocket Costs for Each Health Condition and Event Users can Identify (i.e., in FIG. 5), for Each Individual in the Reference Population.

Detail Description Paragraph:
[0283] For each person in the reference population, it is determined whether the

person had each of the respective health conditions and events that users can identify during the year covered by the claims data. Using the plan design of each health insurance plan for which the HCC will provide information and the claims-level data for the reference population,. The following are calculated: the annual out-of-pocket costs associated with each specific health condition or event that users can identify, had the person with the condition/event paid for services according to the plan design of the respective health insurance plans.

Detail Description Paragraph:
[0284] Specifically, for each person in the claims data identified as having the particular health condition or experiencing the particular health event during the year covered by the claims data, one sorts the health care claims by those attributable to the condition/event by date. The total cost of those claims is calculated, with each claim priced based on its "cost" . Then the plan design and the price data are used to process the health care claims chronologically, assigning out-of-pocket costs according to the plan design of the particular health insurance plan being modeled. This is repeated this for each plan for which the HCC will provide information. Rules for pricing health care claims are the same as those previously described.

Detail Description Paragraph:
[0292] Within each group, one calculates the mean of total out-of-pocket spending for health care attributable to hypertension. One calculates these values for each health plan about which the particular application of the HCC is providing information, and for each of the scenarios of in-network use and out-of-network use. Finally, one calculates the mean of total out-of-pocket spending for health care attributable to hypertension, under the scenario of no health insurance, so that individuals were required to pay billed charges for this health care.

Detail Description Paragraph:
[0306] Flexible Spending Account Calculator: Introductory Screen (FIG. 1), of the HCC Description:

Detail Description Paragraph:
[0307] The first page of the FSAC is designed to attract the user's attention, provide a short summary of the tool and to motivate the user to begin using the tool by clicking on the "Step 1" button. For the description see FIG. 1. Flexible Spending Account Calculator and FSAC are substituted for Health Cost Calculator and HCC when the FSAC is run as a stand alone basis. When the HCC and the FSAC are run together, a joint annotation may be used, or the FSAC annotation may be used exclusively. Analogous, as used here, means that the screens may be identical except as to the annotation, or that screen correspond with regard to content, e.g., purpose of HCC and purpose of FSAC. For further description, see the description of HCC, FIG. 1.

Detail Description Paragraph:
[0331] User enters key information for FSAC, analogous to FIGS. 3a, 3b, and analogous to FIGS. 4a, 4b of the HCC description, but with different content. In this step, a user enters additional information about him/herself and his/her covered household members that the FSAC will use in calculating optimal contributions. Unlike the information described previously, the information provided here is not required for the HCC but only for the FSAC.

Detail Description Paragraph:
[0339] Using the plan design of each health insurance plan for which the FSAC will provide information, and the claims-level data for the reference population, the annual out-of-pocket cost are calculated for households in the reference population had they paid for services according to the plan design of the respective health insurance plans.

Detail Description Paragraph:
[0340] Specifically, for each household in the claims data, the claims are sorted for individual services by household member and by the date it was provided. Using the plan design, and the price data, then the health care claims are processed chronologically, assigning out-of pocket costs according to the plan design of the particular health insurance plan being modeled. This is repeated for each plan for which the FSAC will provide information. This processing takes into account all cost components of the respective plans, including individual and household deductibles; coinsurance and co-payments; individual and household stop-loss provisions; and what services are covered and not covered. For covered services provided in-network, deductibles and coinsurance rates are calculated based on the "cost" of the service. For services that are not covered by a particular plan. and covered services that are provided out-of-network, deductibles and coinsurance rates are calculated based on the "billed charge" for the service.

Detail Description Paragraph:
[0353] Each household member pays 100%of the cost of the first $1000 of health services in a year; and then pays 40%of the cost for all health services in that year, up to a maximum out-of-pocket payment (excluding the deductible)of $4000 per year. Using the hypothetical household profile described, and hypothetical data on health service use and prices, Table 3a illustrates the process of calculating out-of-pocket costs for this household in Plans A and B, assuming all services are provided in-network.

Detail Description Paragraph:
[0354] Table 3a illustrates the process of calculating out-of-pocket costs assuming all services are provided in-network.

Detail Description Paragraph:
[0355] Table 3b illustrates the process of calculating out-of-pocket costs assuming all services are provided out-of-network.

Detail Description Paragraph:
[0362] For each household in the reference population, the total of health care used during the year covered by the claims data is calculated. Specifically, each health care service is priced using its cost. Then the cost of all services for each member of a household are added up to obtain the household total. For instance, the total health care use of the hypothetical household illustrated in Table 3 over that year is $10,865 (the sum of the "cost" column). Then all households in the reference population are sorted by the total value of health services used during the year.

Detail Description Paragraph:
[0374] Calculating Optimal FSA Contributions: A Model of Optimal Contributions to a Flexible Savings Account

Detail Description Paragraph:
[0375] The main incentive that employees have for contributing to a flexible savings account (FSA) is the ability to spend pre-tax dollars on medical care. However, the optimal amount to contribute is considerably complicated by two factors: (1) uncertainty regarding the incidence of medical expenditures over the course of the coming benefit year and (2) loss of any unspent money in the FSA at the end of the year. The estimated optimal contributions for different scenarios are then calculated, based on the user's input and the user's household's likely distribution (estimated by the FSAC, using the methods we have described) of out-of-pocket costs for the coming year in relevant health plans, and considering the degree of risk aversion indicated by the consumer. The key innovation in the method for calculating optimal contributions is the recognition that medical expenditures toward the end of the benefit year can improve health or be otherwise productive. Previous methods, which assigned zero weight to medical expenditures at the end of

the benefit year, systematically underestimated optimal FSA contributions.

Detail Description Table CWU:
2TABLE 2 Algorithm to Solve the Program STEP1 GIVEN G, CALCULATE MAX U FOR EACH POSSIBLE HEALTH SHOCK 5 U max (G ,) = Max [U (h , c) s . t . { h = h 0 + m + I = G + (I - G) + c + (mp - G) if mp > G I = G + (I - G) + c if mp G] STEP2 CALCULATE EXPECTED VALUE OF THE MAXIMUM UTILITY GIVEN G 6 E [U max (G)] = U max (G ,) f (;) STEP3 REPEAT STEPS 1 AND 2 FOR ALL POSSIBLE VALUES OF G STEP4 CHOOSE G WITH THE HIGHEST EXPECTED MAXIMUM UTILITY G.sub.Opt = Arg max{E[U.sub.max (G)]}

Detail Description Table CWU:
3TABLE 3a Calculation of Out-of-Pocket Costs. Assuming All Services In-Network Plan B Plan A Out-of- Date of Billed Out-of-Pocket Pocket Member Service Description Cost Charge Cost Cost Comments Employee 15 Jan Outpatient visit $100 $150 $10 $100 15 Jan Prescription drug $50 $90 $10 $50 05 Jan Annual exam $150 $210 $10 $70 Plan B deductible met Spouse 15-Jan Outpatient visit $120 $150 $10 $120 15 Jan Prescription drug $200 $275 $10 $104 Plan B deductible met 15 Feb Prescription drug $200 $275 $10 $40 15 Mar $200 $275 $10 $10 $40 17 Mar Outpatient visit $120 $150 $10 $24 15 Apr Prescription drug $200 $275 $10 $40 15 May Prescription drug $200 $275 $10 $40 15 Jun Prescription drug $200 $275 $10 $40 17 Jun Outpatient visit $120 $150 $10 $24 15 Jul Prescription drug $200 $275 $10 $40 15 Aug Prescription drug $200 $275 $10 $40 15 Sept Prescription drug $200 $275 $10 $40 15 Oct Prescription drug $200 $275 $10 $40 15 Nov Prescription drug $200 $275 $10 $40 02 Dec Outpatient visit $150 $10 $30 05 Dec Outpatient visit $150 $10 $30 10 Dec Outpatient visit $120 $150 $10 $24 15 Dec Prescription drug $200 $275 $10 $40 16 Dec 3 day $5,000 $9,000 $0 $904 Plan B stop- hospitalization loss met 20 Dec Prescription drug $100 $125 $10 $0 20 Dec Outpatient visit $200 $260 $10 $0 24 Dec Outpatient visit $120 $150 $10 $0 Child 03 Mar Emergency room $500 $800 $20 $260 Plan B visit deductible met 03 Mar Prescription drug $80 $100 $10 $16 03 Mar Prescription drug $35 $45 $10 $7 06 Mar Outpatient visit $100 $150 $10 $20 15 Mar Outpatient visit $100 $150 $10 $20 15 Aug Annual physical $150 $210 $10 $30 Total $10,865 $15,740 $310 $2,273 Annual Premium $600 $1,200 Total Out- Of-Pocket Spending $910 $3,473

Detail Description Table CWU:
4TABLE 3b Calculation of Out-of-Pocket Costs. Assuming All Services Out-of-Network Plan B Plan A Out-of- Date of Billed Out-of-Pocket Pocket Member Service Description Cost Charge Cost Cost Comments Employee 15 Jan Outpatient visit $100 $150 $150 $150 15 Jan Prescription drug $50 $90 $90 $90 05 Jan annual exam $150 $210 $210 $180 Plan B deductible met Spouse 15-Jan Outpatient visit $120 $150 $150 $150 15 Jan Prescription drug $200 $275 $275 $260 Plan B deductible met 15 Feb Prescription drug $200 $275 $275 $110 15 Mar $200 $200 $275 $275 $110 17 Mar Outpatient visit $120 $150 $150 $60 15 Apr Prescription drug $200 $275 $275 $110 15 May Prescription drug $200 $275 $275 $110 15 Jun Prescription drug $200 $275 $275 $110 17 Jun Outpatient visit $120 $150 $150 $60 15 Jul Prescription drug $200 $275 $275 $110 15 Aug Prescription drug $200 $275 $275 $110 15 Sept Prescription drug $200 $275 $275 $110 15 Oct Prescription drug $200 $275 $275 $110 15 Nov Prescription drug $200 $275 $275 $110 02 Dec Outpatient visit $150 $200 $200 $80 05 Dec Outpatient visit $150 $200 $200 $80 10 Dec Outpatient visit $120 $150 $150 $60 15 Dec Prescription drug $200 $275 $275 $110 16 Dec 3 day $6,000 $9,000 $9,000 $2,440 Plan B stop- hospitalization loss met 20 Dec Prescription drug $100 $125 $125 $0 20 Dec Outpatient visit $200 $260 $260 $0 24 Dec Outpatient visit $120 $150 $150 $0 Child 03 Mar Emergency room $500 $800 $800 $560 Plan B visit deductible met 03 Mar Prescription drug $80 $100 $100 $40 03 Mar Prescription drug $35 $45 $45 $18 06 Mar Outpatient visit $100 $150 $150 $60 15 Mar Outpatient visit $100 $150 $150 $60 15 Aug Annual physical $150 $210 $210 $84 Total $10,865 $15,740 $15,740 $5,642 Annual Premium $600 $1,200 Total Out- Of-Pocket Spending $16,340 $6,842

CLAIMS:

7. A method for calculating optimal flexible savings account contributions comprising the steps of: formulating a dynamic numerical model based on a consumer's objective function; said consumer's objective function further comprising the steps of: formulating a utility function; incorporating parameters of health plans; assembling recent health care use and cost data for a reference population acquiring personal and health information from users on themselves and on their household members; estimating the distribution of out-of-pocket costs the user and his/her household is likely to face in the coming year in various health plans, based on the experience of comparable households in the reference population; calibrating the health transition equation with historical claims data linked to the user's health status; solving the numerical model by numerical calculation methods with assigned exogenous parameters and with test values for the preference parameters; estimating preference parameters using parameter values which correspond to solutions of the dynamic program which are close to observed historical expenditures of like-situated members of a given health plan, inputing an estimate of a user's risk aversion, inputing an estimate of the user's income; and solving the dynamic programming model by numerical calculation methods for optimal flexible spending account contributions for a particular user in one or more particular health plans (or no health insurance), with assigned exogenous parameters and with estimated values for the preference parameters; and outputting the optimal contributions.

8. A computer-based method for calculating optimal flexible savings account contributions comprising the steps of: processing data and performing numerical solutions with a central processing unit; storing data and computer programs on a mass storage device; storing data and commands in volatile memory; formulating a consumer's objective function which maximizes expected future utility, namely 8 G , { m , c } max = - .infin. .infin. EU = - .infin. .infin. U (h , c) f (,) where, G represents the FSA contribution; {m.sub..epsilon., c.sub..delta.}.sub..epsilon.=-.infin..sup- ..infin. represents the consumption plan for every possible health shock .epsilon.; U(h, c) represents the utility of the consumer from health status h and consumption of non-medical goods c; f(.epsilon., .theta.) is the probability density function of the distribution for health shocks, where .theta. parameterizes the distribution of health shocks and will depend on the characteristics of the consumer.

14. A system for providing comparative cost information for health insurance plans comprising:; at least one computer comprising a central processing unit, a data entry device, and volatile memory for performing calculations; a mass storage for storing parameters of health plans and recent claims cost data for health plans, for a reference population; claims-level files for said reference population which have been generated by calculations of said computer applied to said recent claims cost data; user's household members' health and personal information entered into computer by said data entry device; comparison cost data for household members, output by computer, said data calculated for household members health and personal information, compared to said reference population; and output premium and estimated out-of-pocket expense cost data for household members, output by computer, said data calculated for household members health and personal information.

15. The system as in claim 14 further comprising: an output calculated by the computer from costs for a "worst-case" scenario from said personal data and said reference population data.

16. The system as in claim 15 further comprising: output of out-of-pocket costs for an individual for particular medical conditions and health events with "in-network" treatment, as calculated by the computer from personal, reference population and health plan parameter data; and output of out-of-pocket costs for an individual for particular medical conditions and health events with "out of-network" treatment, as

calculated by the computer from personal, reference population and health plan parameter data.

17. The system as in claim 16 further comprising: output cost data based upon various factors including "all in-network" treatment and "all out-of-network" treatment, as calculated by the computer from personal, reference population and health plan parameter data; output cost data based upon various factors including expected very high, high, moderate, low and no usage of health care, as calculated by the computer from personal, reference population and health plan parameter data; output cost data based upon said parameters of health plans such as individual and household deductibles, coinsurance and co-payments, individual and household stop-loss provisions, and services covered and not covered, as calculated by the computer from personal, reference population and health plan parameter data.

18. A computer-based system of providing comparative cost information for health insurance plans comprising: a central processing unit for processing data; a mass storage device for storing data; volatile memory for storing data and commands; a data entry device for said mass storage; an output viewing device; a print output device parameters of health plans stored on said mass storage device; recent claims cost data for each health plan stored on aid mass storage device; claims-level files for a reference population calculated by said central processing unit from data on said mass storage device; user's household members' health and personal information provided for storage on said mass storage device by entering data utilizing said data entry device; household members health and personal information compared to reference population by said central processing unit and output by said central processor to output viewing device; cost data for household members output to output viewing device, said cost data calculated by said central processing unit based on said comparison and upon various factors including expected very high, high, moderate, low and no usage of health care, and including "all in-network" treatment and "all out-of-network" treatment; parameters of health plans such as individual and household deductibles, coinsurance and co-payments, individual and household stop-loss provisions, and services covered and not covered stored on mass storage device and used for cost data calculations by said central processing unit; wherein viewable output options for viewing on viewing device include premium and estimated out-of-pocket expenses, costs for a "worst-case" scenario, out-of-pocket costs for an individual for particular medical conditions and health events with "in-network" treatment, and out-of-pocket costs for an individual for particular medical conditions and health events with "out-of-network" treatment.

19. A system for calculating optimal flexible savings account contributions comprising: at least one computer; an algorithm for estimating the optimal flexible spending account contribution which includes a consumer's objective function; an instantaneous utility function; a residual utility function; a health transition equation; a transition equation for assets; a transition equation for total medical expenditure; exogenous parameters which have assigned values; preference parameters which have initially assigned test values; said health transition equation calibrated with historical claims data linked to the user's status; said algorithm forming a dynamic programming model which is solved by numerical calculation methods with assigned exogenous parameters and with test values for the preference parameters; estimated preference parameters using parameter values which correspond to solutions of the dynamic program which are close to observed historical expenditures of like-situated members of a given health plan; and a solution of the dynamic programming model by numerical calculation methods for optimal flexible account contribution for a particular user with assigned exogenous parameters and with estimated values for the preference parameters.

20. A computer-based system for calculating optimal flexible savings account contributions comprising: a central processing unit for processing data and performing numerical solutions; a mass storage device for storing data and computer programs; volatile memory for storing data and commands; a numerical model

comprising wherein: a consumer's objective function which maximizes expected future utility, 10 G , { m , c } max = - .infin. .infin. EU = - .infin. .infin. U (h , c) f (,) where, G represents the FSA contribution; {m.sub..epsilon., c.sub..epsilon.}.sub..epsilon.=-.infin..sup..infin. represents the consumption plan for every possible health shock .epsilon.; U(h, c) represents the utility of the consumer from health status h and consumption of non-medical goods c; f(.epsilon., .theta.) is the probability density function of the distribution for health shocks, where .theta. parameterizes the distribution of health shocks and will depend on the characteristics of the consumer. an instantaneous utility function; a residual utility function; a health transition equation; a transition equation for assets; a transition equation for total medical expenditure; values assigned to exogenous parameters; test values assigned to preference parameters; the health transition equation calibrated with historical claims data linked to the user's status; said numerical model solved by using numerical methods on the central processing unit, utilizing data stored on the mass storage device and in volatile memory, said solution being the optimal flexible spending plan contribution.

23. The system of claim 20 further comprising: .epsilon..about.F(.epsilon.-;.theta.)t=1 . . . 12 as the probability distribution from which the health shocks are drawn, where .epsilon. assumed normally distributed and where F(.) is the cumulative density function of the distribution of shocks, and .theta. parameterizes that distribution; and calculating .theta. by dynamic programming.

Previous Doc Next Doc Go to Doc#